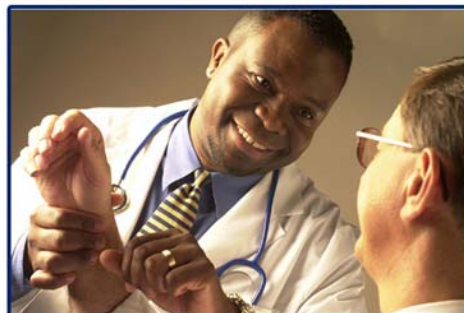




## Bioterrorism Preparedness:



*People,*



*Tools,*



*&*



*Systems*

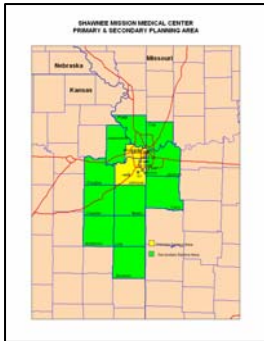
for Detecting and Responding to a Bioterrorist Attack

Testimony of Samuel H. Turner, Sr.  
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## INTRODUCTION

There are few things that scare a hospital administrator more than the threat of bioterrorism. There are issues like staffing shortages, reimbursement for patient care, capital needs for aging and undersized facilities, specialty hospitals...the list is endless. However, many of these issues are within our creative control and can be addressed through consistent and diligent efforts to make change. The threat of bioterrorism isn't so easily controlled. We don't know when it will strike. It could be an hour from now or 10 years from now. We don't know in what form it will take hold. It could be anthrax or smallpox...or any other number of destructive agents. There's no way to estimate the scope of the event. It could affect 10 people or 10,000 people. These are the thoughts that challenge us during the day and keep us up at night.

## THE SITUATION



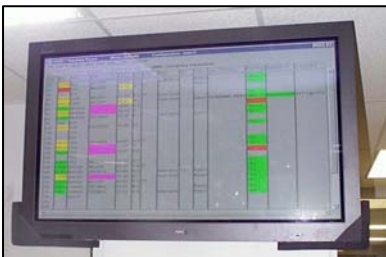
I am pleased to have the opportunity to share information with you about the current situation at Shawnee Mission Medical Center. To give you some perspective, Shawnee Mission Medical Center is located in a southwestern suburb of the Kansas City metropolitan area. There are roughly three million people in the metropolitan area with about one million in Shawnee Mission Medical Center's primary service area. We have the largest emergency department in Johnson County serving nearly 50,000 patients annually. It is the third-busiest emergency department in the entire metropolitan area behind only two designated Trauma Centers that are located on the Missouri side of the metropolitan area (Truman Medical Center and North Kansas City Hospital). In the

entire state of Kansas, only hospitals in Topeka and Wichita record as many visits as Shawnee Mission Medical Center. This volume is particularly impressive when taking into consideration that the current Emergency Department is one-third the size recommended by current planning standards to accommodate this volume.



Over the past several years, community demand for services at Shawnee Mission Medical Center has grown steadily and as a result, the hospital is substantially expanding its facility. The mission of this expansion project is to create a state-of-the-art medical services destination point in an optimal environment for healing and whole-person health. Improving the patient experience and provider workflow is being integrated in every aspect of design along with the concepts of adaptability and continual collaboration. The new Emergency Department will feature a hub-like triage station that is surrounded by disease specific treatment pods and decentralized waiting areas. It is our desire to implement a number of bioterrorism readiness features into this expansion.

## **CURRENT FACILITY CHALLENGES & FUTURE SOLUTIONS**



In 2002 and 2003, Shawnee Mission Medical Center was forced to go on diversion for 60 and 40 days respectively. Diversion means that the hospital cannot accept any additional ambulance traffic. All operational efficiencies have been investigated and implemented. The best hope is to maintain the 2003 diversion

days and not increase days on diversion. The lack of an adequate number of telemetry beds contributes greatly to this forced diversion. Currently less than 30% of the Medical-Surgical beds have monitoring capability. Without this \$84.2 million expansion, there will continue to be times when we cannot meet the community need for our services, particularly emergency services. And in the case of a disaster situation, we would be even less able to accommodate the community's needs without this expansion in its entirety.



The expansion is desperately needed, particularly to accommodate the estimated 60,000 visits by 2007. As a part of this effort, we also believe it is incumbent on us to incorporate features to deal with the very real issues of bioterrorism in any of its various forms (i.e. biochemical or biological). Shawnee Mission Medical Center sits along Interstate 35 with a number of both truck and auto traffic passing by with hazardous materials on a daily basis. In addition, we are also in close proximity to major rail lines that can pose considerable threats to our region from either deliberate or accidental causes. It is urgent that the hospital be prepared for potential chemical accidents, natural disasters and potential terrorist attacks.

Due to the projected high costs of our expansion, we will not be able to incorporate many of the readiness proposals we feel are needed without federal funding and federal partnerships. The cost of incorporating bioterrorism readiness into the proposed expansion is estimated to be \$4.5 million of the entire \$12 million Emergency Department expansion. The following information outlines a number of design

modifications and requirements we feel are necessary to deal with the requirements of contamination mitigation or mass casualty treatment that we would like to incorporate into the new facility.

### **Security**

- Long access road to allow hospital officials to detect incoming threat
- Dedicated security vestibule with metal detectors and security guard station

### **Bioterrorism Readiness**

- The Emergency Department must be built next to a flat parking area that can allow for rapid expansion of the facility. If a bioterrorism threat is detected, the hospital can accommodate First Responder/National Guard/Emergency Services personnel to quickly locate temporary treatment units next to the hospital. The design will allow us to quickly turn our parking areas into extra treatment areas for mass casualties.
- Separate ambulance and walk-in entrances must be built. If one entrance has to be shut down due to a bio-threat, the other entrance can still be useable.
- A treatment pod system must be incorporated into the design to allow for flexibility and containment of an infectious agent that would not necessarily force us to shut down the entire Emergency Department. In other words, a contaminated patient will be able to enter from the outside into an isolated room that provides privacy for decontamination. After becoming decontaminated, the patient will then be able to directly enter the Emergency Department. In addition, design and equipment modifications must be incorporated into the air handling

mechanical systems to isolate the different airflows so as to not contaminate the entire Emergency Department and/or hospital.

- A triage area made up of a large area and treatment rooms needs to be positioned adjacent to the Emergency Department to rapidly distinguish medical cases.
- The Emergency Department should occupy the first floor and have the capability to completely contain itself and be under lockdown from the rest of the hospital if needed.
- The various medical technology labs must be located in close proximity and within the containment space.
- The patient areas must be directly above the Emergency Department for easy access for other hospital personnel in case of terrorism events.
- Dedicated security stations, including screening stations and restricted access areas must also be incorporated into the design and construction.

## **ADDITIONAL PREPAREDNESS NEEDS**

### **Infection Control Concerns**

Infection Control specialists, although always important, have become indispensable in the post-9/11 environment. These experts fully understand the impact of bioterrorism threats and how quickly, if implemented, they could have a significant impact on our society. Following are some of the concerns of Infection Control staff and the needs that exist to be as fully prepared as possible for possible attack.

- Resist contamination of the hospital environment by staging triage of incoming suspect patients at a point outside of the hospital;

- Mechanical/equipment resources are needed (ventilators, negative air flow rooms, masks, gloves, and gowns) which could take 24 to 48 hours to access, and may deplete vendor supplies in a short period of time;
- Prophylaxis of healthy individuals coming to the hospital must be carried out away from contaminated areas, but will require staffing;
- Trained Infection Control personnel to monitor wearing of Personal Protective Equipment (PPE) and placement of patients in negative air isolation rooms. SMMC currently has 14 isolation rooms;
- Educating staff about the signs and symptoms of bioterrorism agents must be ongoing. Additional staffing and educational funding is needed for this purpose.
- Communication among hospitals, health departments and emergency personnel must be standardized so that the same definitions and control techniques are put into place. With standardization, help from staff can be distributed where it is needed and at any facility. Ideally, this would come from the federal level so that if help is needed, anyone from around the country could be called in to help.

### **Emergency Planning Integration**



There has been a citywide initiative to coordinate efforts for emergency preparedness and these efforts have served the city well.

There needs to be continued planning integration between our hospital and other community resources to ensure that the community will be adequately served in a time of need. Good

guidelines and best practice recommendations from the federal government are needed to ensure efficiency and that all communities are as prepared as they



can be. Locally, there have been great strides in this area and an EMS system supports hospital coordination. However, not every hospital has access to the Hospital Emergency Administrative Radio system due to cost constraints, so again our ability to be most effective for our community is jeopardized due to lack of funding.

### **Self-Sustaining Protection**

Funding is needed to allow Shawnee Mission Medical Center to stand-alone for 48-72 hours before help arrives. This includes vaccinations, antibiotics, chemical antidotes, personal protective equipment and supplies.

### **Additional Space and Equipment Needs**



Although we feel that we are addressing many of the space needs in our expansion planning, there are additional needs for space and equipment to perform triage, decontamination, mass vaccination and a temporary mortuary. In addition, the current

personal protective equipment is either not protective enough or so cumbersome it inhibits our provider's ability to provide care to patients. Development needs to occur to make the equipment that is available on the market applicable to the health care environment.



### **The Best Laid Plans**

The best laid plans are just that without trained personnel to carry out the actions.

Additional funding is needed for training Emergency Department associates including bioterrorism response and Hazmat.

## **Increased Security**

Shawnee Mission Medical Center has increased its security efforts since 9/11, but there is so much that is still at risk. Funding is needed to improve access control and security for prevention through increased surveillance and tighter access and preparedness for a response to a terrorist attack.

## **PRACTICE, PRACTICE, PRACTICE**

For years the Kansas City metropolitan area has been performing citywide disaster drills. Only a couple days before the drill and in the midst of our preparation for the drill in 2001, we all sat in shock at the horror we were seeing on television the morning of



September 11. Since that time, the drills have taken on a whole new meaning and there is a greater sense of reality.

We have put countless resources into upgrading our preparation, but a wide gap still exists. We have upgraded our

emergency preparedness manual to include bioterrorism. We have changed our Medical Staff bylaws to give temporary status to physicians in a disaster situation. We have created a large notebook that is utilized in the lab so they can be vigilant in their efforts to swiftly identify any trends as they are occurring. Unfortunately, our day-to-day operations limit our preparation. There are several hundred patients who need the attention of our caregivers on a daily basis. The “what ifs” are endless and it is almost overwhelming to think about all that needs to be done and know that there is no way with our current financial resources to accomplish all that we want to.

In addition to the citywide disaster drills, we also conduct periodic table top drills. Before and after all drills, citywide or tabletop, we conduct preparation meetings and then following the drill, critique our performance. Everyone involved in the drills are included in the critique, not just Shawnee Mission Medical Center associates. The Merriam Fire Department noticed that our incident command process needed some improvement and offered to conduct a training session. This type of cooperation has contributed greatly to the improvements our hospital and other community resources have been able to make.

In addition to the drills, there are periodic “live” situations that help us think through our preparedness for something bigger. In the past two years, we have had a severe ice storm that left us without our normal power supplies and there was a major water main break that left us without running water supplies. Although we were pleased with our overall preparedness for these situations, there are things we have been able to tweak in the plans that will be valuable for similar situations or even more severe ones. In addition, last fall there was a local outbreak of cryptosporidiosis that gave an opportunity for the state to communicate an outbreak and keep everyone abreast of the situation. Because of the media coverage, we encountered a large number of patients coming to the Emergency Department for fear of having this parasite. There were some confirmed cases, but many others were not. This gave both the lab and the providers in the Emergency Department an opportunity to be aware of possible patients with a condition.

We believe that we are virtually as prepared as we can be with our current resources, but the limitations we are aware of and do not have the ability to overcome are terribly

concerning. Our constraints are not vastly different than other hospitals in the area, the region or the country. We all are faced with many of the same challenges and it is clear that federal assistance is needed to address these issues for the good of our country.

## **THE COMPETITION FOR CAPITAL**

According to Solucient, a the leading source of health care business intelligence, the median profitability for community hospitals like Shawnee Mission Medical Center is 3.64%. Although Shawnee Mission Medical Center reinvests all of its profit back into the hospital for the benefit of the community, there simply isn't enough money to make all of the needed improvements and preparations while maintaining a financially viable organization.

Nationally, hospitals are being asked to improve overall quality including reducing clinical errors and infection rates. The solutions that are in place to help with this effort come at no small price. In 2005, Shawnee Mission Medical Center will be installing a comprehensive clinical informatics system. Utilizing this system, Shawnee Mission Medical Center will be able to gather a wide variety of clinical and financial data. This will provide a solid data baseline in which to compare with after the project is completed in 2008. This state-of-the-art system will provide the opportunity to allow health care providers more time at the patient's bedside and less time locating and maintaining paper records. In addition, Shawnee Mission Medical Center will be able to deliver enhanced care more quickly with this system in case of a disaster. This system is expected to cost the medical center approximately \$4.5 million.

## **SILENT PROTECTION**

If only there were more safeguards in place that like that of HealthSentry. In 2002, the Cerner Corporation launched a software application as a pilot program in the Kansas City area. Cerner estimated that the startup investment over a five-year development and rollout period would cost approximately \$2 million. This software was made available to the local hospitals that already operated Cerner lab information systems at no cost, however. The HealthSentry tracking tool gets information from the existing systems without extra technical work and cost. The program automatically operates in the background and is monitored and maintained through connections to Cerner's data center. A data file of each provider's lab information is sent daily through a secure network with encryption processes to protect patient identity to Cerner. After the file arrives at Cerner, the data are analyzed and released in a series of reports and regional maps that are made available to the health department the next morning. Less than a day later, public health officials can log onto a secure web site to view which diseases were reported in the field. Health department officials have reported that through this system, they are receiving information 2-3 days earlier than without this technology.

The data made available through this system could be one of the first signals that a bioterrorism event has occurred. Through automated systems like this and the constant vigilance of our front-line providers, trends can be identified and more appropriately responded to in order to minimize the potential loss of human life.

## **IN SUMMARY**

Clearly in this time of real threats we must be prepared for possible attack. We firmly believe that our new facility could greatly assist in the overall emergency preparedness for our area. Again, due to the location of the hospital, our Emergency Department sees significant volume and is strategically located to provide community support in the event of a terrorist attack. Therefore, we must design the Emergency Department to provide the space, equipment and trained personnel that are needed to ensure that our first responders have been given every opportunity to save precious lives. However, we know that we cannot do this alone. We will continue to make our best efforts to prepare our facility, physicians, nurses and staff to the best of our ability. We will continue to work proactively with other local health care providers and emergency services providers to ensure the most coordinated effort should an incident occur. And we will continue to ask for the federal government's support in these efforts. The residents of our community, and others across the nation, deserve nothing less.